

alone, with its fleet of just 24 helicopters, had experienced 29 failures requiring repair in the six-month period immediately prior to the accident. And one of the gyroscopes that previously had failed was on board N2743E on June 14, 1999, when it crashed.

Goodrich also was on notice of serious airworthiness concerns regarding the gyroscope. Pursuant to 14 C.F.R. § 145.63(a):

Each certified domestic repair station shall report to the [FAA] Administrator within 72 hours after it discovers any serious defect in, or other recurring unairworthy condition of, an aircraft, power plant, or propeller, or any component of any of them. The report shall be made in a form and in a manner prescribed by the Administrator, describing the defect or malfunction completely without withholding any pertinent information.

Goodrich operates such repair stations in Austin, Texas, Grand Rapids, Michigan and Ft. Lauderdale, Florida. Such reports are made in the form of a "Service Difficulty Report" ("SDR").

On January 21, 1999, six months before N2743E crashed, PHI filed an SDR regarding a VG-204AB gyroscope removed from a Sikorsky S-76A helicopter, registration number N1545K. On April 6, 1999, two and one-half months before the accident, PHI filed another SDR regarding a VG-204AB gyroscope, this one removed from N2743E itself. Goodrich claimed it was not aware of either of these SDRs, or of the filing of any other SDRs regarding gyroscopes on board PHI helicopters during 1999. Nor did it file any SDRs with the FAA regarding VG-204AB gyroscopes.

After seven days of trial, during which the trial court denied Goodrich's motions for a judgment as a matter of law at the close of plaintiff's case and at the conclusion of all the evidence, the jury rendered a verdict in favor of plaintiff for \$1,275,830, finding Goodrich 100% responsible for the crash. In rendering this verdict, the jury chose between two proffered explanations as to why Greene and Jones descended into that "hole" and crashed into a mountainside that was almost 400 feet lower than their take-off point. Was this a case of pilot error, as Goodrich claimed? Or was it, as plaintiff claimed, a case of a pilot (Greene, the pilot-in-command) flying in "instrument meteorological conditions" (darkness, heavy fog, quarter-mile visibility), who followed a critical navigational instrument that was reporting false data (his ADI), which led him into a perilous flight situation from which recovery was not possible, even at full power? The jury's determination that the Goodrich-made vertical gyroscope feeding data to Greene's ADI was defective bespeaks two implicit conclusions that jurors drew. They (1) rejected Goodrich's "pilot error" theory, and (2) accepted plaintiff's explanation that Greene unknowingly had followed a "lying" ADI into a "hole" surrounded by mountains, out of which neither pilot reasonably could be expected to fly the helicopter to safety.

After its post-trial motions seeking judgment as a matter of law or, in the alternative, a new trial were denied, Goodrich appealed to the Sixth Circuit, challenging the district court's denial of its motions for summary judgment, for judgment as a matter of law, and for a judgment notwithstanding the verdict. On May 20, 2005, the Sixth Circuit reversed the decision of the United States District Court for the Eastern District of Kentucky and remanded the case with instructions to enter judgment in favor of Goodrich and dismiss the case, without a new trial. Thereafter, on

August 30, 2005, the Sixth Circuit denied plaintiff's petition for rehearing *en banc*.

REASONS FOR GRANTING THE PETITION

The Sixth Circuit's 2-1 opinion holds that federal aviation law preempts plaintiff's state law failure to warn claim, which the district court had dismissed. This holding on a question of such exceptional importance is contrary to prior decisions of other Circuits. *Cleveland v. Piper Aircraft, Inc.*, 985 F.2d 1438 (10th Cir. 1993); *Hodges v. United Airlines, Inc.*, 44 F.3d 334 (5th Cir. 1995). The Sixth Circuit's decision also conflicts with prior decisions of this Court and the Sixth Circuit in that it improperly reweighs the evidence under the guise of assessing its legal sufficiency to support the jury verdict. *Reeves v. Sanderson Plumbing Prod., Inc.*, 530 U.S. 133, 150-51 (2000); *Moore v. Kuka Welding Sys.*, 171 F.3d 1073, 1078 (6th Cir. 1999); *Pratt v. National Distillers & Chem. Corp.*, 853 F.2d 1329, 1337 (6th Cir. 1988). Review by this Court is necessary to secure and maintain uniformity among the lower courts regarding the standard for reviewing evidentiary sufficiency, particularly as to jury verdicts.

I. THE SIXTH CIRCUIT'S HOLDING THAT PLAINTIFF'S FAILURE TO WARN CLAIM WAS PREEMPTED BY FEDERAL LAW INVOLVES AN EXCEPTIONALLY IMPORTANT ISSUE THAT HAS DIVIDED THE CIRCUITS ADDRESSING IT. THE CIRCUIT SPLIT ON THIS ISSUE WARRANTS REVIEW BY THIS COURT IN ORDER TO BRING CONSISTENCY AMONG THE CIRCUITS AND THE DISTRICT COURTS.

In addressing plaintiff's cross-appeal, the Sixth Circuit decision holds that plaintiff's state-law claim for failure to warn was properly dismissed by the district court based on federal preemption. With little elaboration, the opinion states, "We agree with the Third Circuit's reasoning in *Abdullah [v. American Airlines, Inc.]*, 181 F.3d 363 (3^d Cir. 1999)] that federal law establishes the standard of care in the field of aviation safety and thus preempts the field from state regulation." *Greene*, 409 F.3d at 795, Appendix B, p. 23a.

The opinion thus adopts the views expressed by the First and Third Circuits. *French v. Pan Am. Express*, 869 F.2d 1 (1st Cir. 1989) (state law governing pilot drug testing preempted by the Federal Aviation Act ["FAA"]); *Abdullah, supra*, 181 F.3d 363 (legislative history of FAA shows congressional intent to federally regulate aviation safety; any state claim relating to aviation safety is federally preempted). Two other Circuits have reached the opposite conclusion. The Tenth and Fifth Circuits have held that federal law does not preempt all tort claims related to aviation safety. *Cleveland v. Piper Aircraft, Inc.*, 985 F.2d 1438 (10th Cir. 1993) (the FAA does not preempt the field of aviation safety since Congress did not indicate a "clear and manifest" intent to exclude state common law and the savings clause specifically called for federal regulations and state law to

“stand side by side”); *Hodges v. United Airlines, Inc.*, 44 F.3d 334 (5th Cir. 1995) (the Airline Deregulation Act [“ADA”] does not preempt state law claim for negligence because it did not relate to “rates, routes, or services,” the areas that the ADA expressly preempts, and the express preemption provision precludes any implied preemption).

Moreover, many district courts have ruled against federal preemption in the context of aviation tort claims. *Cartegena v. Continental Airlines, Inc.*, 10 F.Supp.2d 677 (S.D. Texas 1997); *Margolis v. United Airlines, Inc.*, 811 F.Supp. 318 (E.D. Mich. 1993); *Hoagland v. Town of Clear Lake*, 2004 WL 2634353 (N.D. Ind. 2004); *Levy v. Delta Airlines, Inc.*, 2004 WL 2222149 (S.D.N.Y. 2004); *Alshrafi v. American Airlines, Inc.*, 321 F.Supp.2d 150 (D. Mass. 2004); *see also Schumacher v. Amalgamated Leasing, Inc.*, 806 N.E.2d 189 (Ohio Ct. App. 2004); *Shupert v. Continental Airlines Inc.*, 2004 WL 784859 (S.D.N.Y. 2004).

The Sixth Circuit’s holding belies its traditional reluctance to recognize federal preemption of state and local laws. As Judge Cole of the Sixth Circuit pointed out in his dissent,

[O]ur circuit has traditionally shown a proper amount of restraint and caution before finding State and local laws preempted by federal law. Under this regime, I cannot assume that the FAA implicitly preempts any State or common law-imposed duties here. Admittedly, the FAA is involved in overseeing the quality control of certain aviation equipment; however, neither the appellant nor the majority have proffered any reason why a State’s more stringent duty of care in the failure to warn context could not supplement rather than frustrate the FAA.

Greene, 409 F.3d at 798, Appendix B, p. 29a-30a. When an exceptionally important issue such as this is decided inconsistently by the Circuits addressing it, petitioner submits that review by this Court should be granted, particularly given the prominent role that aviation plays in the everyday lives of Americans.

II. IN HOLDING THAT THE EVIDENCE WAS LEGALLY INSUFFICIENT TO SUPPORT A FINDING OF DEFECT, THE SIXTH CIRCUIT IMPROPERLY REWEIGHED THE EVIDENCE UNDER THE GUISE OF ASSESSING ITS LEGAL SUFFICIENCY TO SUPPORT THE JURY VERDICT, IN VIOLATION OF PRECEDENTS ESTABLISHED BY THIS COURT, THE OTHER CIRCUITS, AND THE SIXTH CIRCUIT ITSELF.

The Sixth Circuit's holding that there was insufficient evidence to support the jury's verdict was based on three conclusions that the court drew from the evidence. The opinion states that the evidence showed (1) "that it would be possible for a pilot to navigate the helicopter if an ADI failed," (2) "that multiple events could have caused" the crash, and (3) that the failure and repair history for Goodrich's vertical gyroscopes did not "indicate a gyroscope defect" *Id.* at 793, Appendix B, p. 20a. Based on these three conclusions about the state of the evidence, the Court of Appeals' opinion holds, as a matter of law, that there was no defect in Goodrich's vertical gyroscope.

In determining if judgment as a matter of law was required, a reviewing court may not reweigh the evidence, for that is exclusively the province of the jury and not part of a court's consideration of judgment as a matter of law. *Zenith Radio Corp. v. Hazeltine Research, Inc.*, 395 U.S. 100, 123

(1969). Instead, the court construes the evidence in a light most favorable to the party who prevailed under the verdict, giving that party the benefit of all reasonable inferences from the evidence. *Weisgram v. Marley Company*, 528 U.S. 440, 453 (1975).

Each of the three conclusions mentioned above, which comprise the articulated basis of the Sixth Circuit's holding that there was insufficient evidence of defect, is the product of that court improperly reweighing the evidence under the guise of assessing its legal sufficiency to support the jury's verdict. First, the opinion states that the jury could not reasonably have found that the Goodrich gyroscope feeding inaccurate data to Greene's ADI was in a defective condition unreasonably dangerous to the user because the evidence demonstrated "that it would be possible for a pilot to navigate the helicopter if an ADI failed." *Greene*, 409 F.3d at 793, Appendix B, p. 20a. The opinion states that PHI lead pilot Thomas Methvin "testified that even if one ADI failed or was receiving incorrect information, Greene and/or pilot-in-command Jones [*sic*] should have relied upon the other ADIs in the cockpit to safely fly or land the aircraft." *Id.* at 793, Appendix B, p. 19a. The opinion in essence holds that, based on Methvin's testimony, there was one only reasonable conclusion that the jury could have drawn from the evidence – i.e., that Greene and Jones should have been able to fly the helicopter out of the "hole" to safety. In other words, the opinion holds with pilot error as the *only* reasonable explanation.

The opinion gives far more credit to Methvin's testimony than it demands or deserves. Counsel for Goodrich merely asked Methvin, hypothetically, to assume "that everything is okay when the takeoff occurs," "that you were a pilot up in the air," and "that your ADI that receives information from

one of the gyros isn't working right." Based on these assumptions, Goodrich's counsel asked Methvin, "And you would use – expect the other ADI and/or the standby indicator to go ahead and safely fly or land the aircraft, right?" Methvin responded, "Yes, sir." Not only did Methvin's response to this obtuse hypothetical question not *require* the jury to find that Greene and Jones should have been able to fly the helicopter out of the "hole" to safety, it would not even support such a finding. In posing his hypothetical question to Methvin, Goodrich's counsel made no attempt to replicate the actual perilous situation that Greene and Jones were in that night – i.e., flying in darkness, heavy fog, and quarter-mile visibility four hundred feet below their take-off point, three thousand feet below their intended altitude, and surrounded on all sides by mountains, while hurtling at 200 miles per hour (80 yards per second) toward an unseen mountainside, with only nineteen seconds to climb out.

Contrary to the opinion's conclusion, Methvin's testimony in no way addressed whether it would be reasonable to expect pilots flying in such perilous conditions "to safely fly or land the aircraft." *Id.* Contrary to the precedents of this Court and of the Circuits, the Sixth Circuit improperly reweighed Methvin's testimony, inappropriately construing it against plaintiff. The Sixth Circuit also disregarded other evidence on which the jury reasonably relied, which showed that, under the actual prevailing conditions on June 14, 1999, the pilots cannot be faulted for failing to fly the helicopter safely out of the "hole" into which the "lying" ADI had led them.

Second, the opinion states that the jury could not reasonably have found that the Goodrich-made gyroscope feeding inaccurate data to Greene's ADI was defective because the evidence demonstrated "that multiple events could have caused" the crash. *Id.* at 793, Appendix B, p. 20a. The

opinion states that plaintiff's expert, Douglas Herlihy, who has decades of experience determining the causes of aircraft crashes, attributed the crash to multiple causes. This mischaracterizes Herlihy's testimony. In standard-of-review parlance, the opinion fails to construe Herlihy's testimony and the reasonable inferences therefrom in a light most favorable to plaintiff. Construed in that light, Herlihy's testimony substantiated plaintiff's claim that an in-flight failure of the Goodrich-made vertical gyroscope caused an erroneous ADI reading. His testimony also confirmed and complemented the substantial physical evidence, which established that the ADI found at the crash site was providing an inaccurate reading on impact. The recovered ADI's faceplate demonstrated that on impact the ADI was reading 2 degree roll right - i.e., almost "wings level" - even though the crash kinematics (principally, the tree cuts on the mountainside) established that the aircraft actually was in a 10-15 degree left roll with its nose still down - i.e., *descending* - on impact.

Herlihy took into account the evidence normally used in determining the cause of aircraft crashes. According to his testimony, all available signs pointed toward the Goodrich-made gyroscope and away from other factors (e.g., an electrical failure) as the cause of the inaccurate ADI reading. His testimony further demonstrated that, in heavy fog and darkness and at low altitude, where a split-second of disorientation could make all the difference, the inaccurate ADI reading was enough to cause cockpit confusion that took the helicopter off-course and into the mountainside. It is true that Herlihy acknowledged the role that the weather conditions played in this crash. While he acknowledged that weather conditions made flying dangerous that night and forced Greene and Jones to follow their instruments, including the "lying" ADI, Herlihy consistently maintained that the

inaccurate ADI reading led the pilots into the "hole" out of which they could not safely fly.

At bottom, this is a case in which the defective component triggered an unbroken chain of quickly cascading events leading directly to the crash. Though there be multiple links in that chain, the jury reasonably concluded that it started with the failure of Goodrich's vertical gyroscope, as Herlihy had opined. If a pilot flying in instrument meteorological conditions such as this follows an instrument into a dangerous flight path or situation because the instrument was providing false data, and the aircraft crashes, the instrument failure logically is the probable cause of the accident. If a pilot follows a "lying" instrument's direction to within 19 seconds of a controlled impact with a mountainside and, even after noting a failure, becomes irretrievably confused about his actual position and situation, that instrument failure still is the probable cause of the accident. If two pilots with three such instruments do not know which is trustworthy and which is not, and crash as a result, the accident flowed from the original instrument failure.

Even if one assumes, without evidence, that not all of the three ADIs in the subject helicopter were malfunctioning, the jury still had to choose between two scenarios: either (1) the pilots understandably were unable to determine their actual attitude and position in the 19 seconds they had left, in the dark, foggy, disorienting conditions in which they were flying, or (2) although they were spatially disoriented in dark, foggy conditions and had only 19 seconds to correct their course, the pilots still retained the ability to recover and avoid the crash. The jury had to make that choice. It judged the credibility of the witnesses, considered all of the evidence, and reached its verdict. The jury's conclusion that the failure of Goodrich's vertical gyroscope was the probable cause of

this crash was a reasonable, well-supported choice that should not be second-guessed, as the Sixth Circuit improperly has done.

Third, the Sixth Circuit opinion states that the jury could not reasonably have found that the Goodrich-made gyroscope feeding inaccurate data to Greene's ADI was defective because the failure and repair history for Goodrich's vertical gyroscopes did not "indicate a gyroscope defect" *Id.* In reaching this conclusion, the court of appeals improperly substituted its view of the failure and repair history of Goodrich's vertical gyroscopes, completely overlooking a very significant part of this evidence. The district court permitted the admission of two SDRs that PHI had filed with the FAA concerning these gyroscopes. This evidence revealed that, within six months prior to this accident, the same type of Goodrich-made gyroscope, installed in the same type of helicopter (in one case, the very same helicopter), owned by the same company (PHI), had malfunctioned and been repaired or replaced by Goodrich. The existence of the two SDRs reporting the subject gyroscope to the FAA represents very significant evidence of *defect*. The reason is that the filing of an SDR, *by definition*, is an official "red flag" meant to alert manufacturers, repair facilities, and the FAA that a particular aircraft component has been found to have a "serious defect" or "other recurring unairworthy condition." 14 C.F.R. § 145.63(a) (1999). Title 14, Section 145.63 of the Code of Federal Regulations provides in relevant part that repair stations (such as Goodrich's) must report to the FAA administrator "any serious defect in, or other recurring unairworthy condition of, an aircraft, power plant or propeller or any component of them, . . . describing the malfunction completely without withholding any pertinent information." *Id.* It also requires that repair stations submit a form prescribed by the FAA Administrator when making

such a report (i.e., the SDR) and states that, "[i]f the defect or malfunction could result in an imminent hazard to flight, the repair station shall use the most expeditious manner it can to inform the Administrator." 14 C.F.R. § 145.63(b) (1999).

The essential facts relating to the two SDRs in question are clear. Plaintiff requested all SDRs relating to the allegedly defective gyroscope during discovery. Goodrich responded by claiming that no SDRs existed. Prior to trial, however, plaintiff discovered the existence of the requested SDRs from a publicly accessible source, the FAA's internet database. The district court admitted the SDRs that PHI had filed because Goodrich opened the door. In admitting this evidence, the district judge characterized the SDR as "the report of a defect in a gyroscope." He added, "If there was a service difficulty report on this gyroscope and they sent it in, then that is a defect." Thus, by definition, the SDRs pertaining to Goodrich's vertical gyroscope came into evidence as direct and positive proof of a defect in this component. 14 C.F.R. § 145.63(a) (1999). Defendant's failure to produce the SDRs during discovery was either willful or the result of a lack of due diligence in answering plaintiff's material discovery requests. When taken with the other evidence offered by plaintiff, the SDRs substantiate the defect that the jury found. Contrary to the Sixth Circuit's conclusion, the SDRs stand as properly admitted "failure and repair" evidence showing defect.

The fact that these SDRs were filed by the customer, PHI, rather than the manufacturer, Goodrich, does not diminish their impact as evidence of defect. Given the definitions of "defective" and "unreasonably dangerous" under Kentucky law, it is difficult to imagine better "failure and repair" evidence of defect than the SDRs filed by PHI. As the court of appeals opinion notes, "defective" means that the product

does not meet the reasonable expectations of the ordinary consumer as to its safety and "unreasonably dangerous" means that the product is dangerous to an extent beyond that which would be contemplated by the ordinary consumer who purchases it, with the ordinary knowledge common to the community as to its characteristics. *Greene*, 409 F.3d at 788-89, Appendix B, p. 9a-10a. As a customer operating medevac helicopters, PHI knew its pilots were often required to fly in suboptimal conditions. By filing SDRs on the exact Goodrich gyroscope involved here, this customer clearly expressed its safety expectation of this gyroscope - i.e., that it operate properly and not fail in flight, lest PHI's pilots be placed in peril. In the end, Goodrich's gyroscope did not meet that expectation.

It was reasonable for the jury to conclude that an aircraft component significant enough to have led two very experienced pilots into that "hole," out of which they could not safely fly their helicopter, was in a defective unreasonably dangerous condition. This conclusion was reasonable, despite the absence of evidence concerning "the useful life" or "rate of replacement" of Goodrich gyroscopes, on which the court of appeals opinion heavily relies. For that opinion to hold otherwise is to reward Goodrich for making "useful life" or "rate of replacement" evidence impossible by failing to maintain the records needed to derive it. (Goodrich keeps no statistics and thus has no capability to retrieve complete history of repairs for "on condition" gyroscopes, i.e., gyroscopes repaired as they fail.)

Nothing in Kentucky products liability law suggests that there cannot be a finding that a product was defective without statistics showing the product's useful life or rate of replacement. The plaintiff need only prove that the product that caused the accident did not meet the reasonable

expectations of the ordinary consumer as to its safety and was dangerous to an extent beyond that which would be contemplated by the ordinary consumer who purchased it, with the ordinary knowledge common to the community as to its characteristics. As this case shows, this can be proven without statistics showing the product's useful life or rate of replacement. No statistic showing how often other Goodrich gyroscopes failed or were replaced could diminish the causative link between this particular in-flight failure and this crash. Simply because other helicopters experienced an in-flight failure of a Goodrich gyroscope without crashing does not mean that no Goodrich gyroscope could ever be the root cause of an aircraft crash. Such a hard and fast rule would be unprecedented in the law of strict product liability. The evidence presented in this case established a direct link between the gyroscope failure and the erroneous reading on the ADI, which caused the pilots to become so disoriented while flying in dark, foggy conditions and at low altitude that they could not recover in time to avoid hitting the mountainside.

Viewed in the context of this evidence, the jury's determination that Goodrich's gyroscope was defective and a substantial factor in causing this crash was amply supported by the evidence and eminently reasonable. This is not a situation in which there was a complete absence of fact and the jury was left to speculate. The Sixth Circuit's unprecedented reweighing of the evidence cries out for review by this Court.

At the very least, review should be granted to address the Sixth Circuit's draconian entry of judgment as a matter of law, instead of a new trial order or a remand for the district court to consider a new trial. Fed. R. Civ. P. 50(d). As petitioner argued in the rehearing petition, should the

defendant's appeal be granted, then she is entitled to a new trial. In short, consistent with precedents established by this Court, the Sixth Circuit should not have entered judgment as a matter of law, but instead should have ordered a new trial or remanded for the district court to consider a new trial. *Neely v. Martin K. Eby Const. Co.*, 386 U.S. 317, 329 (1967).

Respectfully submitted,

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APPENDIX A

**UNITED STATES COURT OF APPEALS
FOR THE SIXTH CIRCUIT**

Nos. 03-5017/5018

[Filed August 30, 2005]

JUDY GREENE, EXECUTRIX OF)
THE ESTATE OF DONALD GREENE,)
DECEASED,)
Plaintiff-Appellee,)
)
WAUSAU INSURANCE COMPANY,)
Intervening Plaintiff-Appellee (03-5017),)
Intervening Plaintiff (03-5018),)
v.)
B.F. GOODRICH AVIONICS SYSTEMS, INC.,)
DOING BUSINESS AS B.F. GOODRICH)
AEROSPACE, ETC.,)
Defendant/Third-Party Plaintiff,)
Appellant/Cross-Appellee,)
)
UNITED TECHNOLOGIES CORPORATION,)
DOING BUSINESS AS SIKORSKY AIRCRAFT,)
Defendant,)
)
PETROLEUM HELICOPTERS, INC.,)
Third-Party Defendant.)

BEFORE: COLE and ROGERS, Circuit Judges; and COHN*,
District Judge.

ORDER

The court having received a petition for rehearing en banc, and the petition having been circulated not only to the original panel members but also to all other active judges of this court, and no judge of this court having requested a vote on the suggestion for rehearing en banc, the petition for rehearing has been referred to the original panel.

The panel has further reviewed the petition for rehearing and concludes that the issues raised in the petition were fully considered upon the original submission and decision of the cases. Accordingly, the petition is denied.

ENTERED BY ORDER OF THE COURT

* Hon. Avern Cohn, Senior United States District Judge for the Eastern District of Michigan, sitting by designation.

APPENDIX B

**UNITED STATES COURT OF APPEALS
FOR THE SIXTH CIRCUIT**

Nos. 03-5017/5018

[Filed May 20, 2005]

JUDY GREENE, EXECUTRIX OF)
THE ESTATE OF DONALD GREENE,)
DECEASED,)
Plaintiff-Appellee,)
)
WAUSAU INSURANCE COMPANY,)
Intervening Plaintiff-Appellee (03-5017),)
Intervening Plaintiff (03-5018),)
v.)
B.F. GOODRICH AVIONICS SYSTEMS, INC.,)
DOING BUSINESS AS B.F. GOODRICH)
AEROSPACE, ETC.,)
Defendant/Third-Party Plaintiff,)
Appellant/Cross-Appellee,)
)
UNITED TECHNOLOGIES CORPORATION,)
DOING BUSINESS AS SIKORSKY AIRCRAFT,)
Defendant,)
)
PETROLEUM HELICOPTERS, INC.,)
Third-Party Defendant.)

On Appeal From
The United States District Court
For the Eastern District of Kentucky
Civil Action No. 02-8-JMH
Joseph M. Hood, Judge

BEFORE: COLE and ROGERS, Circuit Judges; and COHN*,
District Judge.

OPINION

AVERN COHN, District Judge. This is a products liability case arising out of a helicopter accident. Defendant-Appellant B.F. Goodrich Avionics Systems, Inc. (Goodrich) appeals the district court's denial of Goodrich's motion for summary judgment of Plaintiff-Appellee Judy Greene's (Greene) manufacturing defect claim and the district court's subsequent denials of Goodrich's motions for judgment as a matter of law and motion for judgment notwithstanding the verdict after a jury returned a verdict in favor of Greene.¹ Greene cross-appeals a pre-trial order granting partial summary judgment to B.F. Goodrich and an evidentiary ruling by the district court. Because we find that Greene failed

* Hon. Avern Cohn, Senior United States District Judge for the Eastern District of Michigan, sitting by designation.

¹ The parties refer to the motions made under Fed. R. Civ. P. 50 as motions for "judgment as a matter of law" and "judgment notwithstanding the verdict." In 1991, however, Rule 50 was amended and the terminology changed to refer to these motions as a motion for judgment as a matter of law and a renewed motion for judgment as a matter of law. We hereafter refer to these motions using the current language of Rule 50.

to produce sufficient evidence to create an issue of fact for the jury that there was a manufacturing defect, we **REVERSE** the judgment of the district court and **REMAND** for proceedings consistent' with this opinion.

I. BACKGROUND

A. Factual Background

On the night of June 14, 1999, a Sikorsky 76-A helicopter, aircraft registration number N2743E, owned by Petroleum Helicopters, Inc. (PHI) and piloted by decedent Donald Greene (Greene), crashed into a wooded hillside near Jackson, Kentucky. In addition to Greene, pilot-in-command Ernest Jones (Jones) and two medical technician passengers, Sheila Zellers and Brian Harden, died in the accident.

The helicopter took off from Julian Carroll Airport just after 8:00 p.m. in heavy fog. Because visibility was approximately one-quarter to one-eighth of a mile, Greene was forced to rely almost exclusively on the helicopter's navigational instruments. Less than two minutes after the aircraft's liftoff, an exchange between Greene and Jones recorded on the cockpit voice recorder (CVR) indicated that Jones told Greene that the helicopter was in a right-hand turn and descending. The exchange between Greene and Jones continued as follows:

8:08:05 p.m. Greene: "Okay I think my gyro just quit."

8:08:10 p.m. Greene: "You have the controls?"

8:08:11p.m. Jones: "You're in a left hand turn and descending...turn, turn back and level, level us off."

8:08:18 p.m. Jones: "Right hand turn...right hand turn."

8:08:24 p.m. [Initial sound of impact; CVR ceased operation]

B. Procedural Background

Donald Greene's wife, Judy Greene, brought this suit, claiming that Goodrich defectively designed or manufactured the vertical gyroscope portion of the helicopter's navigation system and that Goodrich was negligent in failing to warn of its defective product.

Goodrich filed a motion for summary judgment. The district court granted the motion in part and denied it in part. The district court summarily dismissed Greene's design defect claim because she produced no evidence of a flaw in the design. With respect to Greene's manufacturing defect claim, the district court held that Greene did not produce evidence of fault under a negligence theory, but it held that Greene's manufacturing defect claim sounding in strict liability could go to a jury because genuine issues of material fact remained with respect to causation. The district court also held that Greene could not maintain a state-law failure to warn claim because federal law regarding aviation standards preempted any duty imposed by state law.

At trial on the manufacturing defect claim, the jury found for Greene and awarded her substantial damages. The jury also awarded damages to Wausau Insurance Co., which had been paying Greene workers' compensation on her husband's death. Goodrich now appeals (1) the district court's denial of Goodrich's summary judgment motion on the manufacturing defect claim; (2) the district court's denial of its motion for

judgment as a matter of law at the end of Greene's case and at the end of the entire case; and (3) the district court's denial of its renewed motion for judgment as a matter of law. Greene cross-appeals, challenging the district court's grant of summary judgment on her failure to warn claim and the court's exclusion of evidence of gyroscope failures that occurred more than six months prior to the helicopter crash.

C. Background on the Product at Issue

Before proceeding to our analysis, it is first prudent to have an overview of the product Greene claims Goodrich defectively manufactured: the vertical gyroscopes on board the helicopter. The helicopter was equipped with two Attitude Display Indicators (ADIs), one Standby Attitude Indicator, and two Horizontal Situation Indicators (HSIs). ADIs indicate an aircraft's position in relation to the earth's horizon and help a pilot control the position of the aircraft relative to the earth. Each ADI in the helicopter displayed pitch, roll, and turn-rate data. The vertical gyroscopes, model number VG-204 A/B, manufactured by Goodrich, provided data to the helicopter's ADIs (which were not manufactured by Goodrich). The vertical gyroscopes were housed inside the nose of the helicopter and were not visible to the pilots during flight. Each ADI received pitch and roll data independently from its own vertical gyroscope. Each ADI also received turn-rate data from two other gyroscopes not manufactured by Goodrich. The vertical gyroscopes in the helicopter did not provide data to any other instrument on the helicopter. Pilots use HSIs to determine course deviation and magnetic heading information. The HSIs in the helicopter received information from other gyroscopes. The Standby Attitude Indicator is a self-contained unit with its own gyroscope.

II. ANALYSIS

Because this case went to trial and resulted in a jury verdict in favor of Greene, we find it unnecessary to address whether the district court erred in failing to grant summary judgment in its entirety to Goodrich. Rather, our analysis will begin by addressing Goodrich's motion for judgment as a matter of law at the end of Greene's case.

A. Whether the District Court Erred in Denying Goodrich's Motions for Judgment as a Matter of Law and Renewed Motion for Judgment as a Matter of Law

We review a district court's denial of judgment as a matter of law *de novo*. *Moore v. KUKA Welding Sys. & Robot Corp.*, 171 F.3d 1073, 1078 (6th Cir. 1999). In cases like this one invoking diversity of citizenship jurisdiction, the Court applies the state law's substantive standard for determining when judgment as a matter of law is appropriate. *Morales v. Am. Honda Motor Co.*, 151 F.3d 500, 506 (6th Cir. 1998); *Darwish v. Tempglass Group, Inc.*, 26 Fed. Appx. 477, 482 (6th Cir. 2002). Under Kentucky law, judgment as a matter of law should be granted only when "there is a complete absence of proof on a material issue in the action, or if no disputed issue of fact exists upon which reasonable minds could differ." *Washington v. Goodman*, 830 S.W.2d 398, 400, 39 5 Ky. L. Summary 23 (Ky. App. 1992). "Every favorable inference which may reasonably be drawn from the evidence should be accorded the party against whom the motion is made." *Baylis v. Lourdes Hosp., Inc.*, 805 S.W.2d 122, 125 (Ky. 1991).

1. Judgment as a Matter of Law

Goodrich says that the district court erred by not granting its motion for judgment as a matter of law against Greene both at the close of Greene's case and again at the close of trial. As discussed below, we find that the" district court erred by not granting Goodrich's motion for judgment as a matter of law at the close of Greene's case.

a. Manufacturing Defect Legal Standard

Under Kentucky law, a manufacturing defect exists in a product when it leaves the hands of the manufacturer in a defective condition because it was not manufactured or assembled in accordance with its specifications. *See Ford Motor Co. v. McCamish*, 559 S.W.2d 507, 509-11 (Ky. App. 1977). A manufacturing defect claim requires the jury to determine whether the product failed because of an error in the process of manufacture or assembly. *Id.* With respect to Greene's strict liability theory, Kentucky has adopted RESTATEMENT (SECOND) OF TORTS § 402A. *See Dealers Tramp. Co. v. Battery Distrib. Co.*, 402 S.W.2d 441, 446-47 (Ky. 1965). Under § 402A, the defendant is held strictly liable if the plaintiff proves the product was "in a defective condition unreasonably dangerous to the user or consumer." *Montgomery Elevator Co. v. McCullough by McCullough*, 676 S.W.2d 776, 780 (Ky. 1984). Proceeding under a strict liability theory does not require the plaintiff to prove fault on the part of defendant. The plaintiff must, however, establish causation under the "substantial factor" test. *King v. Ford Motor Co.*, 209 F.3d 886, 893 (6th Cir. 2000). "Plaintiff must prove that the defendant's conduct was a substantial factor in bringing about plaintiffs harm." *Id.* Nothing precludes a plaintiff from using circumstantial evidence to prove a products liability case so long as the

evidence is "sufficient to tilt the balance from possibility to probability." *Id.* The Restatement (Second) of Torts provides that "unreasonably dangerous" means a product that is "dangerous to an extent beyond that which would be contemplated by the ordinary consumer who purchases it, with the ordinary knowledge common to the community as to its characteristics." RESTATEMENT (SECOND) OF TORTS § 402A cmt. i (1965). "Defective" means "that the product does not meet the reasonable expectations of the ordinary consumer as to its safety." *Worldwide Equip., Inc. v. Mullins*, 11 S.W.3d 50, 55, 46 6 Ky. L. Summary 10 (Ky. App. 1999).

b. The Evidence at Trial

The vertical gyroscopes were destroyed in the crash; accordingly, there was no direct evidence of vertical gyroscope failure. Greene instead relied on four major pieces of evidence in an attempt to circumstantially prove a manufacturing defect in the pilot's vertical gyroscope:²

First, Greene relied on her husband's statement seconds before the crash that he thought his "gyro just quit."

Second, Greene proffered evidence that in the six-month period preceding the crash, there had been forty vertical gyroscope replacements on fifteen of the twenty-four Sikorsky 76-A helicopters owned and operated by PHI. There also had been eleven ADI replacements on seven PHI helicopters

² Although there is no distinction in the record between the vertical gyroscopes in the helicopter, it is clear that Greene's manufacturing defect claim relates to pilot Greene's vertical gyroscope.

during that same time period. The helicopter that crashed had three vertical gyroscopes and two ADIs replaced during the six months preceding the crash.

Third, the National Transportation Safety Board (NTSB) retrieved from the crash site a faceplate of one of the helicopter's ADIs. The NTSB determined from the faceplate that, at the time of impact, the ADI indicated that the helicopter was "pointing to a position between level flight and a 2-degree right roll"³ The NTSB's on-site investigation of the ground damage, including the pattern of treetop leveling and pilot-in-command Jones's last words, both indicated that, at impact, the helicopter was actually "in a left hand turn and descending." As the district court stated, "to oversimplify, the Cockpit Voice Recorder tape and the crash kinematics did not match the reading of the recovered ADI."

Fourth, Greene's helicopter expert, Douglas Herlihy (Herlihy), testified that it was more likely that a vertical gyroscope failure, rather than a failure of other instruments, was the cause of the crash. Herlihy testified that a wiring failure between a vertical gyroscope and its ADI was not as typical as a gyroscope failure itself.⁴ He also testified that it

³ It is unclear from examining the record exactly how the faceplate shows the ADI's reading on impact.

⁴ Goodrich says that the district court erred when it admitted Herlihy's expert testimony because the district court concluded that Herlihy was not qualified as a gyroscope expert. The record indicates, however, that during a *Daubert* hearing, the district court concluded that Herlihy was competent to testify as an accident investigator and to give his opinion regarding why the vertical

was his opinion that "the accident was a result of instrument confusion in the cockpit created by the loss of vertical gyro input to the flying pilot's A.D.I, or gyro horizon."

c. Goodrich's Challenge to Greene's Statement

As an initial matter, Goodrich maintained on brief and during oral argument that Greene's statement as recorded on the CVR, "Okay I think my gyro just quit," was inadmissible hearsay. Goodrich says that the vertical gyroscopes feeding the helicopter's ADIs were located in the nose of the helicopter. Thus, Goodrich argues, it would be impossible for Greene to see a vertical gyroscope or to know that it quit; rather, he only would be able to see the ADIs inside the cockpit that reflected data supplied by the gyroscopes. Additionally, Goodrich argues that there were at least six gyroscopes on the helicopter and that it did not manufacture all of them, so admitting Greene's statement requires speculation as to which gyroscope Greene may have been referring.

At the time the district court admitted Greene's statement, it did not clearly articulate the hearsay exception on which it was relying. The district court did, however, address this issue with specificity when it denied Goodrich's motions for judgment as a matter of law. The district court at that time found that the statement was admissible under two exceptions to the hearsay rule: (1) present sense impression and (2) excited utterance.

We review whether the district court's determination was

gyroscope caused the crash. We find that the district court did not err in admitting Herlihy's testimony.

an abuse of discretion. *Mitroff v. Xomox Corp.*, 797 F.2d 271, 275 (6th Cir. 1986). Under the Federal Rules of Evidence, hearsay is defined as a "statement, other than one made by the declarant while testifying at the trial or hearing, offered in evidence to prove the truth of the matter asserted." Fed. R. Evid. 801(c). Under FED. R. EVID. 803(1), the hearsay rule does not exclude "[a] statement describing or explaining an event or condition made while the declarant was perceiving the event or condition, or immediately thereafter." The excited utterance exception to the hearsay rule under FED. R. EVID. 803(2) requires "first, there must be an event startling enough to cause nervous excitement. Second, the statement must be made before there is time to contrive or misrepresent. And, third, the statement must be made while the person is under the stress of the excitement caused by the event." *Hoggins v. Warden, Fort Pillow State Farm*, 715 F.2d 1050, 1057 (6th Cir. 1983).

As an initial note, it is unclear from the record if Greene's out-of-court statement was even offered at trial to prove the truth of the matter asserted -- the definition of hearsay. Even if it was, however, the district court did not err in admitting Greene's statement as either a present sense impression or as an excited utterance. With respect to a present sense impression, certainly Greene could not personally observe the vertical gyroscopes in the nose of the helicopter as Goodrich argues. However, it is undisputed that Greene could see the ADIs in the cockpit that reflected data supplied by the vertical gyroscopes in the nose of the helicopter. Although Goodrich argues that it is unclear if Greene was referring to *his* ADI in his statement or another ADI in the cockpit, the fact that he said "I think *my* gyro just quit" (emphasis added) appears to indicate that he was referring to his ADI. Indeed, Herlihy, Greene's expert, testified that it would make no difference to an experienced pilot like Greene that the gyroscope is in the

nose of the helicopter. Herlihy testified that if a pilot like Greene said "my gyro just quit," he knows that the information displayed on the ADI is coming from the nose of the helicopter. To suggest that a pilot who is experiencing problems with an ADI display must physically view the gyroscope to reliably detect a malfunction is untenable.

The district court also did not err in concluding that Greene's statement was an excited utterance. Certainly Greene made the statement while under stress of the event that nineteen seconds later resulted in his death. To the extent that Goodrich argues again that Greene could not physically see the gyroscope that allegedly quit, the Advisory Committee Notes to FED. R. EVID. 803 provide that, with respect to a declarant's perception of an event, "the statement need only 'relate' to the startling event or condition, thus affording a broader scope of subject matter coverage." Overall, the district court did not abuse its discretion in admitting Greene's statement.

d. Whether Greene's Evidence Was Sufficient to Prove a Manufacturing Defect

At the heart of Goodrich's argument is its position that Greene failed to meet her burden of proof because she failed to establish an issue of fact for the jury that there was a manufacturing defect in the pilot's vertical gyroscope, *i.e.*, Goodrich says that Greene's evidence failed to "tilt the balance from possibility to probability" and thus show that there was a manufacturing defect in the pilot's vertical gyroscope. *See King*, 209 F.3d at 893. After a review of the record and an examination of Greene's proofs at trial, we agree with Goodrich that the evidence Greene proffered failed to show that there was a manufacturing defect in a vertical gyroscope.

Perhaps what is most problematic to us is Greene's heavy reliance on data indicating the number of vertical gyroscopes and ADIs that had been removed and/or repaired in PHI-owned helicopters in the six months preceding the helicopter accident. The parties presented us with differing interpretations of this data. The NTSB report states that

according to company records, in the 6 months that preceded the accident, fleetwide, there had been a total of 40 vertical gyro replacements on 15 helicopters, and a total of 11 attitude indicator replacements on 7 helicopters. On N2743E[, the helicopter piloted by Greene and Jones], in the preceding 6 months, there were two attitude indicators, and three vertical gyros replaced. According to company records, fleetwide, in the preceding 6 months, the maximum number of attitude indicators replaced on a helicopter was three, and maximum number of vertical gyros replaced was six.

Greene introduced Exhibit No. 21 at trial, titled "S-76 Vertical Gyro Removals" and "S-76 Attitude Director Indicator Removals," which purports to summarize the vertical gyroscopes and ADIs from PHI's helicopter fleet that were removed, replaced, and/or sent to a repair facility between December 15, 1998 through June 14, 1999. Our review of the data contained in this exhibit does not seem to correlate with the figures recited above from the NTSB report. Our review of Exhibit No. 21 suggests that PHI removed 32 vertical gyroscopes and 12 ADIs from some of its helicopters in the relevant six-month period. Regardless of the sum total of vertical gyroscopes and ADIs that were removed, replaced, or repaired during the six months preceding the accident, however, it troubles us that Greene argues that the

data from this exhibit suggest a "large number" of vertical gyroscope failures. The vertical gyroscopes and ADIs for which there were repair orders were not sent solely to Goodrich; rather, PHI sent them to various facilities, including Goodrich; Masco; Helicopter Support, Inc.; Bell Helicopter Textron; and Honeywell, Inc.⁵

The evidence in Exhibit No. 21 does not suggest that there was a manufacturing defect in a vertical gyroscope. Indeed, including ADIs within the list of removals, replacements, and repairs does nothing to support Greene's claim that there was a manufacturing defect in a vertical gyroscope. The evidence in the exhibit could equally suggest that there was a problem with an ADI. Indeed, counsel for Goodrich at oral argument told us that nothing in Greene's proofs ruled out the possibility that an ADI malfunctioned. More significant, however, is the fact that Greene proffered no evidence that the reason for the removal or repairs of the vertical gyroscopes was unusual. Likewise, she proffered no evidence that the rate of replacement of vertical gyroscopes in the PHI fleet differed from the replacement rate of vertical gyroscopes made by other manufacturers.

⁵ It is unclear if Exhibit No. 21 shows that all vertical gyroscopes that PHI removed were manufactured by Goodrich because the gyroscopes were sent to various repair facilities.

Because of our uncertainty after studying the record, we expressed concern to counsel at oral argument about the use of Greene's data regarding vertical gyroscope and ADI removals, replacements, and repairs. We directly asked counsel for both Goodrich and Greene to direct us to the place in the record that would inform us as to the expected useful life of a vertical gyroscope. Both counsel, however, informed us that the record is devoid of such information.⁶ This strikes us as a conspicuous omission, given the fact that without such a benchmark it is impossible to determine whether the vertical gyroscopes removed, replaced, or repaired in the PHI fleet occurred at a statistically significant rate compared with the average life expectancy of a vertical gyroscope. As counsel for Goodrich correctly noted during oral argument, the failure to adduce such evidence is correctly attributable to Greene -- the party with the burden to prove a manufacturing defect. Simply put, Greene's statistics regarding the removal, replacement, and repairs of vertical gyroscopes and ADIs in

⁶ The parties had an opportunity post-argument to respond to our concerns about the lack of this information, but we received no response.

the PHI fleet are meaningless and are not, without more, probative of a manufacturing defect.⁷

Greene's evidence also consisted of Exhibit No. 6, comprising 211 pages of work orders and inspection reports from Goodrich's repair station in Austin, Texas. This exhibit documented work orders Goodrich received from PHI for model VG-204 A/B vertical gyroscopes along with details of the work Goodrich actually performed on each vertical gyroscope submitted to the repair station for evaluation. The documents in Exhibit No. 6 detail work orders from PHI to Goodrich for the period November 1994 through April 1999. Two of the work orders and inspection reports within six months of the accident show that PHI sent two model VG-204 A/B vertical gyroscopes from the helicopter Greene was piloting, registration number N2743E, to Goodrich's Texas facility. The first work order, number FK956, was received by Goodrich on January 25, 1999. The reason listed on the work order for the vertical gyroscope being removed was "#2 pitch kicks in flight." The final inspection report by Goodrich on January 29, 1999, lists as the reason for failure "carbon build-up on slip rings and brushes due to electrical contact." The inspection report states that Goodrich repaired the

⁷ This case presents an important example of how the value of oral argument cannot be understated. Oral argument allowed us to further delve into issues of concern that were not adequately addressed by the parties in their briefs. "The intangible value of oral argument is, to my mind, considerable... Oral argument offers an opportunity for a direct interchange of ideas between court and counsel... Counsel can play a significant role in responding to the concerns of the judges, concerns that counsel won't always be able to anticipate in preparing the briefs." William H. Rehnquist, *Oral Advocacy: A Disappearing Art*, 35 MERCER L. REV. 1015, 1021 (1984).

vertical gyroscope and that it met manufacturer specifications when it was returned to PHI on January 29, 1999. The second work order, number FT858, was received by Goodrich on April 13, 1999. The reason listed on the work order for the vertical gyroscope being removed was, again, "#2 pitch kicks in flight." The final inspection report by Goodrich on April 16, 1999, states "couldn't verify customer complaint, unit performs normally." Before the vertical gyroscope was returned to PHI on April 16, 1999, the work performed on the unit was listed on the final inspection report as "open checked unit, cleaned all slip ring and brushes as a precaution, calibrated, tested and inspected to current mfg spec. . . ." This exhibit likewise is not probative of a manufacturing defect because it does nothing to suggest that any model VG-204 A/B vertical gyroscope listed in the series of work orders was defective at the time it left Goodrich's manufacturing plant.

Another piece of evidence further supports our conclusion that Greene failed to prove that there was a manufacturing defect in a vertical gyroscope. Herlihy testified at trial that it was his opinion that "the accident was a result of instrument confusion in the cockpit created by the loss of vertical gyro input to the flying pilot's A.D.I, or gyro horizon." PHI lead pilot Thomas Methvin, however, testified that even if one ADI failed or was receiving incorrect information, Greene and/or pilot-in-command Jones should have relied upon the other ADIs in the cockpit to safely fly or land the aircraft. Additional testimony by Herlihy provided that the accident "had a number of factors that caused it." Herlihy testified that "the factors include two primary causes," including the weather and Herlihy's opinion that "the helicopter experienced an instrument failure."

Given the evidence that it would be possible for a pilot to navigate the helicopter if an ADI failed; that multiple events could have caused the helicopter accident; and that replacements of vertical gyroscopes on PHI's helicopters, including the one piloted by Greene and Jones, six months prior to the crash do not, standing alone, indicate a gyroscope defect, Greene's proofs were simply insufficient to show that there was a manufacturing defect in a vertical gyroscope. Indeed, at no time did any witness identify a defect in manufacture of model VG-204 A/B vertical gyroscopes.

e. Conclusion

Viewing the totality of the evidence at the conclusion of Greene's proofs leads us to conclude that the evidence amounted to "featureless generality." See OLIVER WENDELL HOLMES, JR., *THE COMMON LAW* 89 (Mark DeWolfe Howe ed., Little, Brown 1963) (1881). In the absence of evidence that one possible explanation was more probable than another, the jury was required to speculate as to whether there was a defect. It is well established that a jury verdict based on speculation, supposition, or surmise is impermissible:

Although the jury may draw reasonable inferences from the evidence of a defect in manufacturing, it is incumbent on the plaintiff to introduce evidence that will support a reasonable inference that the defect was the "probable" cause of the accident as distinguished from a "possible" cause among other possibilities; otherwise, the jury verdict is based upon speculation or surmise.

Midwestern V.W. Corp. v. Ringley, 503 S.W.2d 745, 747 (Ky. 1973). Our view of the evidence indicates that, at best,

Greene only showed at trial that it was possible there was a manufacturing defect in a vertical gyroscope. She simply failed to satisfy her burden that there was such a defect.

Because we conclude that the district court erred in failing to grant Goodrich's motion for judgment as a matter of law at the conclusion of Greene's case, Goodrich's challenge to the district court's denial of Goodrich's motion for judgment as a matter of law at the close of trial and the district court's denial of Goodrich's renewed motion for judgment as a matter of law is moot.

B. Whether the District Court Erred in Granting Summary Judgment to Goodrich on Greene's Failure to Warn Claim

Greene argues in her cross-appeal that the district court erred when it granted summary judgment to Goodrich on Greene's failure to warn claims.

Greene argued that Goodrich breached its duty to warn users of aircraft that contained a vertical gyroscope about the gyroscope's manufacturing defects. Greene relied on Herlihy's opinion that Goodrich "had no central database structure . . . to track malfunctions, to register employee concerns of gyro system weaknesses, or to communicate horizontally between Grand Rapids manufacturing, quality assurance and its field repair facilities." Greene did not allege any violations of federal law with respect to the failure to warn claim. She also did not cite any authority regarding standards that encourage or require a company like Goodrich to maintain such a database.

In granting Goodrich's motion for summary judgment with respect to the failure to warn claim, the district court

held that federal law preempts any state-law imposed duties in the realm of aviation. The district court found it significant that Federal Aviation Administration (FAA) guidelines do not propose or mandate a database like Herlihy suggested Goodrich should maintain. In reaching its conclusion, the district court relied on *Abdullah v. Am. Airlines, Inc.*, 181 F.3d 363 (3d Cir. 1999). In *Abdullah*, the Court of Appeals for the Third Circuit joined other circuits in recognizing that Congress intended aviation safety to be exclusively federal in nature. *Id.* at 371. The Supreme Court has stated that preemption may be inferred where “the pervasiveness of the federal regulation precludes supplementation by the States, where the federal interest in the field is sufficiently dominant, or where the object sought to be obtained by the federal law and the character of obligations imposed by it reveal the same purpose.” *Schneidewind v. ANR Pipeline Co.*, 485 U.S. 293, 300, 108 S. Ct. 1145, 99 L. Ed. 2d 316 (1988) (internal quotations omitted). The *Abdullah* court noted that “the federal courts that adjudicated the first major cases involving the [Federal Aviation Act] interpreted its legislative history as evincing Congress’s intent to exercise supremacy over the field of aviation safety.” *Abdullah*, 181 F.3d at 369. The legislative history of the Federal Aviation Act notes that:

[The purpose of the Federal Aviation Act was to give] [t]he Administrator of the new Federal Aviation Agency full responsibility and authority for the advancement and promulgation of civil aeronautics generally, including promulgation and enforcement of safety regulations.

H.R. Rep. No. 2360, reprinted in 1958 U.S.C.C.A.N. 3741. The House Report also noted that “it is essential that one agency of government, and one agency alone, be responsible for issuing safety regulations if we are to have timely and

effective guidelines for safety in aviation.” *Id.* at 3761. After analyzing this legislative history, the *Abdullah* court concluded:

It follows from the evident intent of Congress that there be federal supervision of air safety and from the decisions in which courts have found federal preemption of discrete, safety-related matters, that federal law preempts the general field of aviation safety.

Abdullah, 181 F.3d at 371. We agree with the Third Circuit’s reasoning in *Abdullah* that federal law establishes the standards of care in the field of aviation safety and thus preempts the field from state regulation. The district court did not err in concluding that federal law preempted Greene’s state-law failure to warn claim.

C. Whether the District Court Erred in Excluding Evidence of Gyroscope Repairs and Replacements Beyond a Six-Month Timeframe

Greene also argues in her cross-appeal that the district court erred by excluding evidence of gyroscope repairs and replacements that occurred on PHI’s helicopters more than six months prior to the crash. When examining a challenge to the exclusion of evidence, we will not reverse the district court’s decision “unless necessary to do ‘substantial justice.’” *Martin v. Heideman*, 106 F.3d 1308, 1311 (6th Cir. 1997).

Greene does not adequately explain how evidence of gyroscope repairs and replacements beyond a six-month time period before the crash would help her case. Indeed, it appears as though such evidence is cumulative of the evidence she proffered that indicated that there had been several

replacements of vertical gyroscopes on PHI's helicopters. The district court correctly limited this type of evidence to a time period of six months prior to the crash so as to prevent the introduction of unnecessary and cumulative data for the jury's consideration. Greene has failed to demonstrate how reversing the district court's evidentiary decision is necessary to do substantial justice.

III. Conclusion

An appellate court does not set aside a jury verdict with ease. Indeed, we previously have recognized that a reviewing court should not lightly overturn a jury verdict. *See, e.g., Pratt v. Nat'l Distillers & Chem. Corp.*, 853 F.2d 1329, 1337 (6th Cir. 1988). Not all questions, however, can be put to a jury, and after a review of the record in this case we conclude that we have an obligation to **REVERSE** the decision of the district court and **REMAND** this case with instructions to enter judgment in favor of Goodrich and to dismiss this case.

R. GUY COLE, JR., concurring in part and dissenting in part.

Regarding all but one of the claims presented in this appeal, I concur in the judgment of the Court. However, I write separately to clarify my concerns with Greene's manufacturing defect claim and to respectfully dissent from the majority's opinion regarding Greene's failure to warn claim.

I.

A product failure cannot always be equated to a product defect, and this, as I see it, is the fatal flaw in Greene's argument. First, to prevail on a manufacturing defect claim

under a strict liability theory, the plaintiff must show that a manufacturing error, resulting in an unreasonably dangerous condition, was the substantial cause of the plaintiffs injury. *Worldwide Equip., Inc. v. Mullins*, 11 S.W.3d 50, 55-58, 466 Ky. L. Summary 10 (Ky. App. 1999). As the majority notes, Greene presented four items of evidence in support of her claim that a vertical gyroscope failure was the probable cause of the crash: (1) Mr. Greene's statement immediately prior to the crash that his "gyro just quit"; (2) evidence that in the six-month period before the crash, several gyroscopes in PHI's helicopters, including in the one piloted by Mr. Greene, were replaced; (3) evidence that the crash kinematics did not match what the helicopter's instruments were reading at the time of the crash; and (4) Herlihy's testimony that, in his opinion, the vertical gyroscope failed on the night of the accident because, based on the remains of the ADI face plate and light panels from the crash, a vertical gyroscope failure was more likely than a wiring failure between the gyroscope and its ADI, or a failure of the ADI. With the exception of the second item of evidence, I find that the sum of Greene's circumstantial evidence was sufficient to support the jury's conclusion that the vertical gyroscope failed.

However, Greene presented no evidence showing that this failure was the result of a manufacturing defect. Because the gyroscope was destroyed in the crash, Greene could not examine it for a manufacturing defect. Her argument has essentially been: the gyroscope failed and therefore there must have been a manufacturing defect. This type of *res ipsa loquitur* reasoning has been embraced by Kentucky courts in manufacturing defect cases. *See Embs v. Pepsi-Cola Bottling Co. of Lexington, Kentucky, Inc.*, 528 S.W.2d 703, 706 (Ky. App. 1975) (reversing a dismissal where the plaintiff was injured by an exploding beverage bottle, the debris of which was unrecoverable, because bottles do not ordinarily explode

in the course of normal handling); *c.f.* *Perkins v. Trailco Mfg. and Sales Co.*, 613 S.W.2d 855, 858 (Ky. 1981) (reversing a dismissal and noting that circumstantial evidence was enough to prove a defect where a new tractor trailer collapsed while it was being properly used). Nevertheless, to be entitled to this *res ipsa loquitur*-type inference, the plaintiff has the burden of showing that the product malfunctioned in a way unlikely to occur if the product had been properly made, and that no outside forces caused the malfunction. See Prosser, Wade & Schwartz, *Torts*, 767 (9th ed. 1994); Dan B. Dobbs, *The Law of Torts*, 1003 (2001). Unfortunately for Greene, she did not show that it was out of the ordinary for a gyroscope to fail. Goodrich presented evidence that vertical gyroscopes are not replaced on any set time table. Rather, gyroscopes are replaced "on condition," meaning that they are replaced once they show a discrepancy or failure. These discrepancies or failures occur during flight, and usually, pilots compensate by relying on the other gyroscopes in the helicopter. The uncontroverted evidence showed that failures occur and that pilots are trained never to rely solely on one gyroscope for this reason. Given this, Greene has not proven that a gyroscope failure is an unexpected event such that a *res ipsa loquitur* inference would be warranted. Accordingly, there was no evidence that the gyroscope failure was a "manufacturing defect," and the jury's outcome to the contrary must be set aside.

Although the majority goes further to say that the gyroscope failure may not have caused the crash, I am not convinced that a gyroscope failure, while usually a manageable event, did not prove fatal in the unique circumstances of this crash. It may be that gyroscopes in certain circumstances are unavoidably unsafe products, see RESTATEMENT (SECOND) OF TORTS § 402A, Comment K, however, all the evidence presented indicates that users are

aware of their unsafe attributes. Without showing a probability that Mr. Greene's gyroscope was defective as compared to other gyroscopes produced by Goodrich, Greene's claim must fail.⁸ Therefore, I respectfully concur in the result reached by the majority as to Goodrich's motion for judgment as a matter of law.

II.

I now turn to Greene's cross-appeal regarding her failure to warn claim. The majority opinion affirms the district court's grant of summary judgment to Goodrich, stating that Greene's state law failure to warn claim is preempted by federal law. A federal law may preempt a state law either expressly or implicitly. *Garcia v. Wyeth-Ayerst Labs.*, 385 F.3d 961, 965 (6th Cir. 2004). When Congress enacted the Federal Aviation Act ("FAA"), it chose several specific areas in which to explicitly prohibit the States from enacting regulations relating to aviation safety. See 49 U.S.C. § 41713(b)(1) (preempting the States from enacting regulations regarding the "price, route, or service of an air carrier that may provide air transportation"); 49 U.S.C.

⁸ I recognize the difficulty of proving a manufacturing defect in a situation where the product is destroyed. This is why the *res ipsa loquitur* inference could prove important in many cases. Here, however, there is an additional complication, because the product, by all accounts, is sometimes expected to fail. If Greene had presented evidence on the expected rate of failure in gyroscopes, she perhaps might have been able to show that a user would not have had any expectation that a relatively new gyroscope would fail, and therefore that a manufacturing defect was the likeliest possibility. Greene may have an argument that Goodrich has the burden to collect and provide consumers with information regarding the gyroscope's failure rate. See *infra*.

§ 44703(i)(2) (preempting the States from enacting regulations imposing liability on any person for “furnishing or using records” of employment); 49 U.S.C. § 44921(f)(2) (preempting the States from regulating when a flight deck officer may carry a firearm). I can find no congressional language in the FAA which would expressly preempt Greene’s state law-based failure to warn claim in this case.

When Congress fails to use express preemption language, a federal law may still preempt state law if the federal law thoroughly occupies the legislative field in question. This Court has previously held that:

Implied preemption occurs if a scheme of federal regulation is so pervasive as to make reasonable the inference that Congress left no room for the States to supplement it, if the Act of Congress touches a field in which the federal interest is so dominant that the federal system will be assumed to preclude enforcement of state laws on the same subject, or if the goals sought to be obtained and the obligation imposed reveal a purpose to preclude state authority . . . a court must begin with the assumption that a state law is valid and should be reluctant to resort to the Supremacy Clause.

Garcia, 385 F.3d at 965.

Under this implied preemption reasoning, the district court determined that federal law preempted state law on the issue of aviation safety duties. The district court cited *Abdullah v. American Airlines, Inc.*, 181 F.3d 363 (3d Cir. 1999) in support of this proposition. As the majority notes, the Third Circuit in *Abdullah* did a close study of the legislative history of the FAA. In *Abdullah*, passengers who were injured during

a flight sued the airline for operating the aircraft in a manner that resulted in severe turbulence. 181 F.3d at 365. The court stated that:

To effectuate this broad authority to regulate air safety, the Administrator of the FAA has implemented a comprehensive system of rules and regulations, which promotes flight safety by regulating pilot certification, pilot pre-flight duties, pilot flight responsibilities, and flight rules.

Id. at 369. The court, noting that federal regulations already exist which lay out the appropriate standard of care that was owed to passengers by pilots and flight crews, concluded that the FAA preempted any standards of care that the State may impose on flight operators. *Id.* at 371. To the extent that we choose to rely on *Abdullah* as persuasive authority, I believe that the facts of the instant case are readily distinguishable. *Abdullah* can truly only be relied on for the limited proposition that a State's standard of care for aviation personnel is preempted by the FAA. The situation before us is not like that in *Abdullah*, because in this case, there are no federal regulations which lay out the exact standard of care. Therefore, I would not expand the proposition in *Abdullah* to apply to commercial enterprises that manufacture aviation equipment.

Furthermore, this Court has previously chosen to apply preemption narrowly with regards to the FAA. In *Gustafson v. City of Lake Angelus*, 76 F.3d 778, 786 (6th Cir. 1996), we stated that Congress had preempted local law regarding navigable airspace, noise control, and aircraft safety, but went on to hold that the FAA did not preempt local regulations/ordinances regarding ground space to be used for aircraft landing sites. *Id.* at 789. Thus, our circuit has

traditionally shown a proper amount of restraint and caution before finding State and local laws preempted by federal law. Under this regime, I cannot assume that the FAA implicitly preempts any State or common law-imposed duties here. Admittedly, the FAA is involved in overseeing the quality control of certain aviation equipment; however, neither the appellant nor the majority have proffered any reason why a State's more stringent duty of care in the failure to warn context could not supplement rather than frustrate the FAA. Consequently, I respectfully dissent from the majority's conclusion that Greene's failure to warn claim was properly dismissed.

APPENDIX C

**UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF KENTUCKY
LEXINGTON**

CIVIL ACTION NO 02-8-JMH

[Filed November 19, 2002]

JUDY GREENE, EXECUTRIX OF)
THE ESTATE OF DONALD GREENE,)
DECEASED,)
PLAINTIFF,)
)
V.)
)
B.F. GOODRICH AEROSPACE,)
D/B/A B.F. GOODRICH AVIONIC)
SYSTEMS, ET AL.,)
DEFENDANTS.)
)

MEMORANDUM OPINION AND ORDER

This matter is before the Court on motion by defendant B.F. Goodrich Avionics for judgment notwithstanding the verdict or, in the alternative, for a new trial [Record Nos. 158 & 161]. Fully briefed, defendant's motion is ripe for review.

INTRODUCTION

The Court on August 26, 2002 granted in part and denied in part defendant's motion for summary judgment. Beginning September 5, 2002 and lasting for seven days, the Court conducted a trial on plaintiff's sole surviving claim - her strict liability manufacturing defect claim. At the close of trial - during the course of which the Court denied plaintiff's motion for directed verdict and at the end of which the Court denied plaintiff's motion for judgment as a matter of law - the jury returned a verdict in favor of plaintiff in the amount of \$1,275,830. Given an apportionment instruction, the jury nonetheless attributed 100% fault to defendant B.F. Goodrich. The Court on October 3, 2002 entered judgment in favor of plaintiff in the amount of \$1,182,674.13 and in favor of intervening plaintiff Wausau Insurance Co. in the amount of \$93,155.87.

LEGAL STANDARD

Federal Rule of Civil Procedure 50(b) provides for post-trial motions for judgment as a matter of law, "Rule 50 is one of the judicial control devices provided by the Federal Rules . . . so that the district court may enforce rules of law. It allows the court to take away from the jury's consideration cases or issues when the facts are sufficiently clear that the law requires a particular result." C. Wright & A. Miller, *Federal Practice and Procedure: Civil 2nd* § 2521 (1995 & Supp. 2002). Invocation of Rule 50 is a serious matter, however, and its provisions should be infrequently applied. After all, "[s]ince judgment as a matter of law deprives the party opposing the motion of a determination of the facts by a jury, it should be granted cautiously and sparingly." *Id.* at § 2524. "The fundamental principle is that there must be a minimum of judicial interference with the jury." *Id.*

In the instant case, defendant is entitled to judgment as a matter of law only if there is "no legally sufficient basis for a reasonable jury" to find for plaintiff. Fed. R. Civ. P. 50(a). The United States Court of Appeals for the Sixth Circuit has described the appropriate review standard for Rule 50 motions as follows:

The evidence should not be weighed. The credibility of the witnesses should not be questioned. The judgment of this court should not be substituted for that of the jury. Instead, the evidence should be viewed in the light most favorable to the party against whom the motion is made, and that party given the benefit of all reasonable inferences. The motion should be granted . . . only if reasonable minds could not come to a conclusion other than one favoring the movant.

K & T Enterprises, Inc. v. Zurich Ins. Co., 97 F.3d 171, 175-76 (6th Cir. 1996).

With respect to defendant's alternative request for a new trial, Rule 59 requires that such a request be granted only in instances where a jury reached "a seriously erroneous result." *Holmes v. City of Massillon*, 78 F.3d 1041, 1045-46 (6th Cir. 1996). The movant must demonstrate that (1) the verdict was against the weight of the evidence, (2) damages were excessive, or (3) the trial was unfair. *Id.* "Courts are not free to reweigh the evidence and set aside the jury verdict merely because the jury could have drawn different inferences or conclusions or because judges feel that other results are more reasonable." *Barnes v. Owens-Corning Fiberglass Corp.*, 201 F.3d 815, 820-21 (6th Cir. 2000).

ANALYSIS

Defendant asserts a smattering of errors. Defendant's contentions shall be addressed in turn.

Defendant's first argument is that the Court erred in admitting evidence respecting repair records and related testimony because such evidence went to negligence, not strict liability. As a corollary to its main argument, defendant argues that repair evidence relating to the "1885" gyroscope was particularly inappropriate, given that the accident helicopter was not outfitted with the 1885 model. These arguments are without merit, however. While it is true that the repair record evidence could have been used to show negligence, this is not to say that evidence of repair is irrelevant to the strict liability theory. To the contrary, strict liability requires proof of defect, a factual question of which repair records can be highly probative. As for the 1885 model, defendant's objection is well-taken - as it was at trial. Though defendant may "disagree," a look at the specific language of the Court's original admonition to the jury shows that it covered the 1885 scenario. A second admonition was unwarranted.

Defendant's second argument is, perhaps, its most brazen. There was simply no evidence, claims defendant, of a manufacturing defect. On this point, the Court merely references its earlier Order passing upon defendant's motion for summary judgment. Suffice it to say that there was ample evidence, albeit circumstantial, to support an award of damages. Though no one will ever know for sure, the Court can speculate that among the evidence the jury found persuasive were (1) the inconsistency between the crash site kinematics and the recovered ADI needle reading, (2) evidence of past gyroscope failure in the repair records,

and (3) pilot Greene's last-second statement that he had lost his gyroscope. The jury would have acted well within reason to have relied on this evidence alone.

Defendant's third argument - that the Court somehow reduced plaintiff's burden of proof - is as curious as defendant's second argument is brazen. The Court shall discuss plaintiff's "burden of proof" argument in some detail, however, if only because defendant's argument in this respect reflects a fundamental, glaring misunderstanding of the applicable law. The Court handles defendant's "burden of proof" argument with special care because the faulty logic exemplified therein is emblematic of the ill-founded arguments pervading defendant's summary judgment and post-trial motions.

To paraphrase defendant's argument in this regard, defendants argue that under *Hersch v. Rockwell Int'l Corp.*, 719 F.2d 873 (6th Cir. 1983), a jury finding of design defect must be supported by direct evidence. Absent direct evidence, defendants reason, a jury can only speculate or conjecture - which, the Court agrees, is impermissible. Defendant's argument is grounded in the following language from *Hersch*: "[A plaintiff must be able] to tilt the scales from possibility to probability on the causation issue. The court is aware of the difficulty of establishing causation in this type of disaster where eyewitness testimony is unavailable and much of the physical evidence is damaged or destroyed. Nevertheless, a jury should not be permitted to engage in speculation and conjecture." *Id.* at 877.

While the Court concedes that the language quoted above is relevant to the case at bar, the Court submits that defendant's "burden of proof" argument is founded on a twisted, undisciplined reading of it. Defendant would be well

advised to parse the language carefully: critically, the language references only degrees of proof ("possibility" versus "probability") not *types* of proof. In other words, the quoted language addresses the necessary *quantum* of proof, not its *form*. Quite simply, to deduce from the quoted language that plaintiffs cannot prove causation by circumstantial evidence is to engage in faulty reasoning. More importantly, such deduction amounts to an incorrect statement of the law. As stated in *Perkins v. Trailco Manufacturing and Sales*, 613 S.W.2d 855 (Ky. 1981), the very case on the *Hersch* court relied, "Circumstantial evidence has no magic quality. It is measured by the same standards of probity and credibility as direct evidence." *Id.* at 857 (quoting *Lee v. Tucker*, 365 S.W.2d 849 (1963)). The rule is that "the existence of a defect in the product itself may be established by a sufficient quantum of circumstantial evidence [L]egal causation may be established by a quantum of circumstantial evidence from which a jury may reasonably infer that the product was a legal cause of the harm." *Id.* (quoting *Holbrook v. Rose*, 458 S.W.2d 155 (1970)).

Defendant raises several additional, perfunctory arguments - all of which are without merit. Two relate to evidentiary issues; specifically, (1) the admissibility of pilot Greene's statement that he "lost his gyro" and (2) the admissibility of the Service Difficulty Reports ("SDI" reports) filed with the FAA by helicopter owner Petroleum Helicopters, Inc. As for the former, the Court found the recorded statement to be admissible under Fed. R. Evid. 803(1) or (2) as a "present sense impression, or "excited utterance." As for the SDI Reports, defendant's claim of unfair prejudice is undercut by the fact that the documents fell within the parameters of plaintiff's requested discovery; defendant's failure to produce the documents renders any objection concerning the SDI reports less than compelling.

Plaintiff's penultimate argument is that no reasonable jury could have concluded that the pilots were not at least partly to blame for the accident. The Court disagrees. Given the high-pressure, split-second decision-making required of the pilots, it seems eminently reasonable for a jury to understand the illusory perfection of hindsight vision.

Defendant's final argument is that a directed verdict was in order because plaintiff failed to provide expert testimony to the effect that the specific gyroscopes in question were defectively manufactured. While it is true that plaintiff did not introduce such direct evidence, the Court would refer the defendant to the discussion above regarding the role of circumstantial evidence in proving product defect.

Defendant's post-trial motions raise two final issues. First, defendant argues that the Court erred in allowing plaintiff to recover fringe benefits, and that therefore the Judgment should be reduced by \$258,422.00. Defendant cites no authority for this proposition, but rather relies on the argument that fringe benefits are not "earned money." Plaintiffs, for their part, rely on austere case law standing for the proposition that juries in wrongful death actions be given wide latitude respecting calculation of damages. The Court's own independent research reveals that, while it appears that the Kentucky courts have not had occasion to rule on the question specifically, fringe benefits are routinely included in damage calculations. *See, e.g., Charash v. Johnson*, 43 S.W.3d 274 (Ky. Ct. App. 2001) (permitting award of fringe benefits and noting that whereas uncertainty as to the *fact* of damages is problematic, uncertainty as to the *amount* of damages is not). Consequently, the Court finds defendant's fringe benefit objection unpersuasive.

Second, defendant argues that it is entitled to a stay of execution or enforcement of the judgment pending ruling on defendant's post-trial motions. Because this Memorandum Opinion and Order disposes of those motions, defendant's request is moot.

Accordingly,

IT IS ORDERED that defendant's motion for judgment notwithstanding the verdict or in the alternative for a new trial [Record Nos. 158 & 161] be, and the same hereby are, **DENIED**.

This the 19th day of November, 2002.

/s/

JOSEPH M. HOOD, JUDGE

Date of Entry and Service.

APPENDIX D

**UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF KENTUCKY
LEXINGTON**

CIVIL ACTION NO 02-8-JMH

[Filed August 26, 2002]

JUDY GREENE, EXECUTRIX OF)
THE ESTATE OF DONALD GREENE,)
DECEASED,)
PLAINTIFF,)
)
V.)
)
B.F. GOODRICH AEROSPACE,)
D/B/A B.F. GOODRICH AVIONIC)
SYSTEMS, ET AL.,)
DEFENDANTS.)

MEMORANDUM OPINION AND ORDER

This matter is before the Court on motion by defendant/third-party plaintiff B.F. Goodrich Avionic Systems ("B.F. Goodrich") for summary judgment [Record No. 90]. Fully briefed, the motion is ripe for review.

I. INTRODUCTION

This is a wrongful death action in the nature of a products liability suit in which plaintiff, the estate of the decedent helicopter pilot (Second-in-Command Donald Greene), alleges that B.F. Goodrich defectively designed or manufactured a critical part of the downed helicopter's navigational system - specifically, the vertical gyroscope, which is located in the nose of the aircraft and provides pitch, roll, and angle of bank information to the Attitude Display Indicator, a crucial navigational instrument. This litigation arises from the June 14, 1999 crash of a Sikorsky S-76A helicopter into a wooded hillside near Jackson, Kentucky, just minutes after takeoff in inclement conditions from Julian Carroll Airport. In addition to Pilot Greene, the crash claimed the lives of Ernest L. Jones, Pilot-in-Command, and two medical technician passengers.

II. SUMMARY JUDGMENT STANDARD OF REVIEW

Under Federal Rule of Civil Procedure 56(c), summary judgment is proper only "if the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to a judgment as a matter of law." Fed. R. Civ. Pro. 56(c); *see also Celotex Corp. v. Catrett*, 477 U.S. 317, 322 (1986); *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 247-48 (1986). In reviewing a motion for summary judgment, "this Court must determine whether 'the evidence presents a sufficient disagreement to require submission to a jury or whether it is so one-sided that one party must prevail as a matter of law.'" *Patton v. Bearden*, 8 F.3d 343, 346 (6th Cir. 1993) (quoting *Anderson v. Liberty Lobby, Inc.*, 477 U.S. at 251-52). Furthermore, the evidence and all facts

must be viewed in the light most favorable to the nonmoving party. *Matsushita Elec. Indus. Co., Ltd. v. Zenith Radio Corp.*, 475 U.S. 574, 587 (1986).

III. FACTS AS PERCEIVED IN THE LIGHT MOST FAVORABLE TO PLAINTIFF

On June 14, 1999, A Sikorsky 76-A helicopter owned by Petroleum Helicopters, Inc. ("PHI") and piloted by the decedent, Second-in-Command Greene, crashed into a wooded hillside near Jackson, Kentucky. In addition to Greene, Pilot-in-Command Jones and two passengers, both medical technicians,¹ Sheila Zellers and Brian Harden, were also killed.

The helicopter took off from Julia Carroll Airport at night and in a heavy fog. Because visibility was approximately one-quarter to one-eighth of a mile, Greene who was piloting the aircraft - was forced to rely almost exclusively on the helicopter's navigational instruments. After an unexceptional initial liftoff, the following colloquy took place between Second-in-Command Greene and Pilot-in-Command Jones less than two-minutes later:

22:08:03 [Jones]: "Okay, you're in a right hand turn and descending."

22:08:05 [Greene] : "Okay, I think my gyro just quit."

22:08:10 [Greene] : "You have the controls?"

¹ The helicopter was a University of Kentucky Hospital medivac helicopter.

22: 08:11 [Jones]: "You're in a left hand turn and descending . . . turn, turn back and level, level us off."

22:08:18 [Jones]: ". . . right hand turn, right hand turn . . ."

22:08:24 [sound of impact]

[National Transportation Safety Board, Factual Report ("NTSB Report"), Aviation Transcript of Cockpit Voice Recorder].

Structurally, the helicopter as equipped with three (3) sets of Attitude Display Indicators ("ADI") and directional gyroscopes. Attitude indicators indicate an aircraft's position in relation to the earth's horizon, and help a pilot control the position of the aircraft relative to the earth. ADIs are vitally important navigational instruments when flying at night and in inclement weather. As recognized by B.F. Goodrich operational materials:

The single most important function of an aircraft flight information system is the display of an artificial horizon (attitude indicator) which allows the pilot to control the aircraft's attitude (i.e. pitch and bank). In a conventional attitude indicator this information is provided mechanically by a gyroscope (a spinning mass similar to a child's top).

K. Devarasetty & G. Watson, 'bfgoodrich2 ,' at www.mth.msu.edu/-maccluer/ProjSummary/bfgoodrich2.html (July 26, 2002). In terms of positioning, "[t]he primary instrument sets were at each pilot station, and a standby set was located on the center instrument panel. Each cockpit

indicator had its own gyro supplying information to [a specific] cockpit indicator, and the information could not be shared with another indicator." [NTSB Report at 1d]. The vertical gyroscopes - manufactured by B.F. Goodrich - that provided the data to the helicopter's ADIs - not manufactured by B.F. Goodrich - did not provide data to any other instrumentation on the aircraft. Nor did any other gyroscope on the helicopter provide pitch, roll, or angle of bank information to the ADIs.

Unsurprisingly, the vertical gyroscopes were not recoverable from the crash cite, and therefore could not be tested. There is, then, no direct evidence of gyroscope failure.

There was, however, certain material recovered from the crash cite evidencing circumstantially such failure. Specifically, a recovered faceplate of one ADI indicated that the helicopter at impact was within two degrees of wings level.² Or using the technical terms, "[e]xamination of the needle indicator for the attitude direction indicator . . . showed that it was pointing to a position between level flight and a 2-degree right roll." [NTSB Report at 1f]. Such a reading, however, contrasts sharply with the crash-site kinematics³. As reported by the NTSB Report:

² The ADI has a black faceplate. Upon impact, the needle or display chevron is driven into the faceplate, leaving a "slap" - or "witness mark" - that demonstrates the instrument reading upon impact.

³ This term refers to the physical scars and marks - such as those on the surrounding trees - that indicate crash position.

On-site investigation revealed the helicopter had impacted rising terrain on a tree-covered slope, at an elevation of about 1,000 feet. The tops of the trees on the top of the ridge were estimated to be about 1,200 feet high. The average slope of the terrain was between 45 degrees and 55 degrees. Broken tree limbs and branches at the accident site were fractured in a 10-15 degree downward attitude, with the left side of the broken branches about 10-15 degrees lower than the right side.

[NTSB Report at 1e]. In other words, despite Pilot-in-Command Jones's last words indicating that the helicopter was "in a left hand turn and descending," Cockpit Voice Recorder, and the crash kinematics evidencing that the aircraft impacted left wing down approximately 15 degrees, NTSB Report at e1, the recovered ADI reading was that of "wings level." To oversimplify, the Cockpit Voice Recorder tape and the crash kinematics did not match the reading of the recovered ADI.

In addition to the inconsistency between the "wings level" reading of the recovered ADI and the site kinematics, there exists other circumstantial evidence suggesting vertical gyroscope failure. Most notably, plaintiff points to the "documented history of failure" of B.F. Goodrich vertical gyroscopes in the form of certain maintenance and flight records. That history - as summarized by the NTSB - reveals that:

PHI operated a fleet of 24 S-76s. In the 6 months that preceded the accident, fleetwide, there had been a total of 40 vertical gyro replacements on 15 helicopters, and a total of 11 attitude indicator replacements on 7 helicopters. On [the particular

helicopter in question], in the preceding 6 months, there were two attitude indicators, and three vertical gyros replaced.

[NTSB Report at 1d.] While B.F. Goodrich does not dispute the hard data, the parties differ on its proper interpretation. Specifically, plaintiff suggests that such data indicates a "history of failure including roll chatters, pitch chatters, failure to erect, precessing, ratcheting in flight, [and] kicks and tumbles." For its part, B.F. Goodrich argues that such a replacement and maintenance history is unexceptional and unrevealing.

VI. LEGAL ANALYSIS

Plaintiff asserts three (3) claims against defendant B.F. Goodrich. First, plaintiff contends that the B.F. Goodrich vertical gyroscope in question was defectively designed. Alternatively, plaintiff argues that it was defectively manufactured. Finally, plaintiff argues that B.F. Goodrich was negligent in failing to warn of their defective product. Plaintiff's claims are discussed in turn.

A. Design Defect

Plaintiff's design defect cause of action must be summarily dismissed. Simply put, plaintiff has proffered no evidence of a flawed design. The only expert evidence respecting the alleged design flaw is the testimony of Douglas Herlihy, a veteran NTSB field investigator and qualified pilot. After conducting a *Daubert* hearing, the Court found Mr. Herlihy qualified as an accident investigator - and thus qualified to testify as to the question of causation - but

unqualified as an expert on vertical gyroscope design.⁴ Absent Mr. Herlihy's testimony, plaintiff has no proof to support a design defect cause of action. Consequently, B.F. Goodrich's motion for summary judgment must be granted as to this claim.

B. Manufacturing Defect

As an initial matter, it is appropriate to note that plaintiff's manufacturing defect claim - like its design defect claim - is grounded in both negligence and strict liability legal theories. Though the negligence and strict liability theories in products liability cases tend to overlap, there is a significant difference: the former theory, but not the latter, requires proof of fault. This said, the negligence prong of plaintiff's suit can be dismissed without extended analysis: as plaintiff's design defect cannot survive absent proof of flawed design, so too cannot plaintiff's negligence claims survive absent proof of fault. Because the record is devoid of any evidence that B.F. Goodrich knew or should have known that the vertical gyroscope in the particular helicopter in question had been defectively manufactured, there is no such proof. Consequently, to the extent plaintiff has cited negligence as a separate and distinct cause of action, B.F. Goodrich's motion to dismiss is likewise granted as to this claim.

There remains, of course, plaintiff's manufacturing defect claim sounding in strict liability. As noted, such a claim requires no proof of fault. It requires only that plaintiff prove

⁴ Mr. Herlihy is a licensed airplane pilot, but not a licensed helicopter pilot. He has decades of experience determining the causes of aircraft crashes, but has no specific expertise respecting vertical gyroscopes or their design.

that (1) the product - here, the helicopter's vertical gyroscope manufactured by B.F. Goodrich - was defectively manufactured, and (2) the defective vertical gyroscope caused the helicopter crash.

While the individual elements must be separately satisfied, the evidence in the instant case serves as circumstantial evidence of both. As to the first point, there can be no doubt but that plaintiff's evidence⁵, considered as a whole, is sufficient (albeit circumstantial) evidence to support a finding that the helicopter's vertical gyroscope was defective. To argue otherwise would be to argue that direct evidence is required, and such an argument flies in the face of both common-sense⁶ and the law. *See, e.g. Calhoun v. Honda Motor Co., Ltd.*, 738 F.2d 126 (6th Cir. 1984). Instead, it is to the second element of plaintiff's strict liability manufacturing defect claim - the "causation" element - that B.F. Goodrich directs the thrust of its argument. The Court acknowledges that, on this point, the question is much closer.

In this regard, B.F. Goodrich argues that vertical gyroscope failure is but one among a score of causal

⁵ Plaintiff's evidence amounts, in significant part, to the following: (1) Second-in-Command Greene's statement that he thought his "gyro just quit"; (2) the discrepancy between the reading on the recovered ADI and Pilot-in-Command Jones's pre-crash statements, as well as the crash kinematics; and (3) the vertical gyroscope's maintenance and replacement records.

⁶ It goes without saying that, because products accidents are often of the fiery, explosive, destructive variety, direct evidence - such as the vertical gyroscope here - is often unrecoverable. Were the law to require such direct evidence, the more destructive the accident the greater the odds of the manufacturer escaping liability.

possibilities. B.F. Goodrich reminds the Court that, even assuming that the recovered ADI faceplate was that of the ADI guiding Second-in-Command Greene (and not the ADI guiding Pilot-in-Command Jones, or the third ADI) and that Second-in-Command Greene was relying on his ADI, other aircraft parts transmitting the data from the vertical gyroscope to the ADI could be responsible for the apparently-erroneous ADI "wings level" misread. Specifically, B.F. Goodrich notes that, instead of the vertical gyroscope, it could have been the a wiring harness, the wiring itself, a junction box, the rate gyro (which supplies rate of turn, but not pitch, roll, or bank data) or even the ADI itself that malfunctioned, causing the ADI to read as it did. B.F. Goodrich also notes that Second-in-Command Greene's pre-crash statement that he thought his "gyro just quit" cannot be taken at face value, because the vertical gyroscope - located in the nose of the helicopter - in fact could not be seen.

Simply stated, B.F. Goodrich contends that plaintiff cannot prove that, even if defective, its vertical gyroscope caused the crash. B.F. Goodrich argues that plaintiff's evidence, consisting largely of the expert testimony of Douglas Herlihy, establishes no more than that gyroscope failure is but a *possible* - though not a *probable* - cause. This, B.F. Goodrich maintains, is not enough, and consequently plaintiff cannot prove causation.

Respecting B.F. Goodrich's underlying premise - that the law requires *probabilities*, and not mere *possibilities* - the Court is in complete accord. It is quite true that the law is replete with judicial admonitions rendering crystal clear the principle that the causation question may not be submitted to a jury absent objective proof that a purported cause is not just conceivable, but likely. *See, e.g., Arthur v. Chrysler Corp.*, 446 F.2d 429, 432 (6th Cir. 1971) ("As a theory of causation,

a conjecture is simply an explanation consistent with known facts or conditions, but not deducible from them as a reasonable inference. There may be 2 or more plausible explanations as to how an event happened or what produced it; yet, if the evidence is without selective application to any 1 of them, they remain conjectures only.") The law requires no less even where, as here, direct evidence is wanting. *Hersch v. Rockwell Int'l Corp.*, 719 F.2d 873, 879 (6th Cir. 1983) (The Court is aware of the difficulty of establishing causation in this type of disaster where eyewitness testimony is unavailable and much of the physical evidence is damaged or destroyed. Nevertheless, a jury should not be permitted to engage in speculation and conjecture.")

The Court disagrees, however, that plaintiff's circumstantial evidence establishes no more than the possible. While B.F. Goodrich makes a strong case, a reasonable jury could find that vertical gyroscope failure, and not another cause, was responsible for the crash. Plaintiff has not only pointed to affirmative circumstantial evidence of vertical gyroscope failure, but has proffered testimony rebutting B.F. Goodrich's claim of other possible causes.⁷ As well, while it is true that Second-in-Command Greene's pre-crash comment is far from conclusive, it cannot be discounted entirely. Furthermore, there is also the matter of the maintenance and replacement records, the interpretation of which is not the province of this Court.

⁷ For example, at the *Daubert* hearing conducted to determine the admissibility of Douglas Herlihy's expert testimony, Mr. Herlihy opined that - given the circumstantial physical evidence - wiring failure was not likely. Also, given that the rate gyro does not supply pitch and bank data, failure of this instrument is less probable.

All told, and on balance, there is a genuine issue of fact in this case, and the question of causation is indubitably material. Because the jury must provide the answer, B.F. Goodrich's motion for summary judgment shall be denied on this point. Plaintiff has proffered ample proof to support its strict liability manufacturing defect claim.

C. Failure to Warn

Plaintiff's third and final cause of action amounts to the assertion that B.F. Goodrich was negligent in failing to maintain a comprehensive database documenting trends of problems with their vertical gyroscopes. Plaintiff's argument in this respect hinges on the testimony of Douglas Herlihy, who posits a theoretical database as a form of responsible corporate oversight. Significantly, Federal Aviation Administration safety guidelines neither propose nor mandate such a system.

The Court, however, joins with the majority of other Courts to have considered the question of state-law-imposed aviation safety duties and holds that federal law is preemptive in this respect. Because federal law preempts any purported state-law-imposed duties, and because plaintiff has not alleged any violations of federal law, plaintiff's claim cannot stand.

Particularly instructive on this issue is a recent case decided by the United States Court of Appeals for the Third Circuit, *Abdullah v. American Airlines, Inc.*, 181 F.3d 363 (3rd Cir. 1999). The court in *Abdullah*, also addressing a state-law failure to warn claim, found federal regulation so thorough and comprehensive as to preempt impliedly any additional law. Observed the Third Circuit:

Our finding of field preemption . . . is based on our conclusion that the FAA and relevant federal regulations establish complete and thorough safety standards for interstate and international air transportation that are not subject to supplementation by, or variation among, jurisdictions. . . . [F]ederal law establishes the applicable standards of care in the field of air safety generally, thus preempting the entire field from state and territorial regulation.

Id. at 367.

Because federal law is preemptive, plaintiff cannot establish a state-law duty to warn. Consequently, B.F. Goodrich's motion for summary judgment must be granted on this claim.

V. CONCLUSION

Because plaintiff has proffered no evidence supporting its claim that B.F. Goodrich knew or should have known of a defect in the particular vertical gyroscope installed in the helicopter in question plaintiff's negligence claim must fail. Because plaintiff has proffered no (admissible) evidence of any design flaw, this claim too must fail. Because plaintiff *has* proffered sufficient circumstantial evidence to prove that the helicopter in question contained a defectively manufactured vertical gyroscope, and that the defective vertical gyroscope caused the crash, plaintiff's strict liability manufacturing defect claim is viable. Finally, because federal law preempts state-law aviation safety standards, plaintiff cannot state a claim for failure to warn.

Accordingly,

IT IS ORDERED that defendant/third-party plaintiff B.F. Goodrich's motion for summary judgment [Record No. 90] be, and the same hereby is, **GRANTED IN PART AND DENIED IN PART.**

This the 26th day of August, 2002.

/s/ _____
JOSEPH M. HOOD, JUDGE

Date of Entry and Service:

2
No. 05-711

FILED

FEB 3 - 2006

OFFICE OF THE CLERK
SUPREME COURT, U.S.

In The
Supreme Court of the United States

JUDY GREENE, EXECUTRIX OF THE
ESTATE OF DONALD GREENE, DECEASED,

Petitioner,

v.

B.F. GOODRICH AVIONICS SYSTEMS, INC., d/b/a
GOODRICH AEROSPACE, AVIONICS AND
LIGHTING DIVISION, n/k/a GOODRICH
AVIONICS SYSTEMS, INC.,

Respondent.

**On Petition For A Writ Of Certiorari
To The United States Court Of Appeals
For The Sixth Circuit**

BRIEF FOR THE RESPONDENT IN OPPOSITION

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QUESTIONS PRESENTED

1. Was the Sixth Circuit correct to hold that Petitioner's failure-to-warn claim under state law was preempted by the Federal Aviation Act?
2. Was the Sixth Circuit correct to hold that the evidence at trial warranted judgment as a matter of law pursuant to Fed. R. Civ. P. 50 in favor of Respondents?

PARTIES TO THE PROCEEDINGS

1. Judy Greene, Executrix of the Estate of Donald Greene, Deceased ("Greene"), is the Petitioner.
2. B.F. Goodrich Avionics, Systems, Inc. ("Goodrich"), is the Respondent.
3. Wausau Insurance Company, was an intervening Plaintiff-Appellee before the Sixth Circuit below, and is not a party to the Petition for Certiorari.

DISCLOSURE OF CORPORATE AFFILIATIONS AND FINANCIAL INTEREST

Pursuant to Supreme Court Rule 29.6, B.F. Goodrich Avionics, Inc., n/k/a L-3 Communications Avionics Systems, Inc. makes the following disclosures:

1. B.F. Goodrich Avionics Systems, Inc., is a subsidiary of the publicly owned corporation L-3 Communications Holdings, Inc.
2. No publicly owned corporation, not a party to the appeal, has a financial interest in the outcome of this case.

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OPINIONS BELOW

The order of the court of appeals denying Petitioner's motion for rehearing *en banc* (Pet. App. A) is unreported but can be found in the Lexis online database at 2005 U.S. App. LEXIS 19255. The opinion of the court of appeals below (Pet. App. B) is reported at 409 F.3d 784. The opinion of the district court denying Respondent's Motion for a Judgment as a Matter of Law as to Petitioner's manufacturing-defect claim (Pet. App. C) is unreported. The opinion of the district court granting Respondent's Motion for Summary Judgment as to Petitioner's negligence, design-defect and failure-to-warn claims, and denying the motion as to Petitioner's manufacturing-defect claims, (Pet. App. D) is unreported.

JURISDICTION

The Sixth Circuit Court of Appeals entered final judgment in this case on May 20, 2005. *Greene v. B.F. Goodrich, Inc.*, 409 F.3d 784 (6th Cir. 2005). The circuit court denied Petitioner's motion for rehearing *en banc* on August 30, 2005. Pet. App. A. This Court's jurisdiction is invoked pursuant to 28 U.S.C. § 1254.

STATEMENT OF THE CASE

This case arises from a helicopter crash near Jackson, Kentucky on June 14, 1999. Petitioner Judy Greene, Executrix of the Estate of Donald Greene, Deceased, brought this lawsuit. Because the Petition for Certiorari makes numerous inaccurate factual representations, Respondent restates the relevant facts below.

Helicopter pilots Greene and Ernest Jones ("Jones") took off from Julian Carroll Airport at approximately 10:00 p.m. in a helicopter owned by Petroleum Helicopters, Inc. ("PHI"). Greene was piloting the helicopter. Pet. App. D at 41a. Because it was dark, Greene and Jones relied on their instruments to fly. *Id.* This is standard procedure, and both pilots were well-trained in instrument use. Pet. at 3-4. After takeoff, Greene experienced trouble with his instruments and asked Jones to pilot the aircraft. Pet. App. D at 41a-42a. Shortly thereafter, the helicopter crashed into the side of a mountain.

The helicopter instruments that are relevant to this case include Attitude Display Indicators ("ADIs") and vertical gyroscopes ("gyroscopes"). While there were other gyroscopes on board that fed data to the ADIs, Respondent manufactured only the vertical gyroscopes in Greene's helicopter. *Id.* at 43a. The National Transportation Safety Board ("NTSB") investigated the crash and issued a report upon which both parties rely. *Id.* The gyroscopes themselves were destroyed in the crash, and the NTSB did not test any gyroscopes. *Id.* Respondent did not manufacture the ADIs in Greene's helicopter. *Greene v. B.F. Goodrich Avionics, Inc.*, 409 F.3d 784, 787 (6th Cir. 2005).

ADIs inform pilots of their aircrafts' position in relation to the earth. Pet. App. D at 42a. Each ADI receives information from its own separate gyroscope, to which it is connected by a series of wires, a wiring harness, and a junction box. *Id.* at 42a-43a, 48a. Greene's helicopter was equipped with two ADIs. *Greene*, 409 F.3d at 787. Each of the two pilot's instrument panels contained one ADI. Pet. App. D at 42a-43a. A Standby Attitude Indicator ("SAI") was positioned between the pilots and was readily visible to both. 409 F.3d at 787.

Each instrument-panel ADI received information from its own gyroscope implanted in the helicopter's nose. *Id.* The SAI received information from a gyroscope within the SAI itself. *Id.* at 788. *None of the gyroscopes were visible to the pilots at any time. See id.* at 787. Thus, contrary to Petitioner's contention that Greene knew his gyroscope malfunctioned (Pet. at 4), Greene could not see any gyroscope, 409 F.3d at 787-88. Only the ADIs and the face of the SAI were visible to the pilots. *Id.*

On June 12, 2002, Petitioner filed a diversity action in the District Court for the Eastern District of Kentucky in which she alleged claims for negligence, defective design, defective manufacturing, failure to warn, and negligent marketing of gyroscopes. With respect to her failure-to-warn claim, Petitioner argued that Respondent's failure to maintain a "comprehensive database documenting trends of problems with their vertical gyroscopes" constituted a negligent failure to warn of the gyroscope's defects. Pet. App. D at 50a. On July 18, 2002, Respondent filed a Motion for Summary Judgment. On August 26, 2002, the district court entered partial summary judgment in favor of Respondent and dismissed Petitioner's claims for negligence, design defect and failure to warn. Pet. App. D at 46a-51a. Petitioner's remaining claim of defective manufacturing went to trial on the theory of strict liability. The jury entered a verdict for Petitioner in the amount of \$1,182,674.13. Pet. App. C at 32a. On September 27, 2002, Respondent filed a Renewed Motion for Judgment as a Matter of Law, which the district court denied on November 19, 2002. Pet. App. C at 31a. Respondent timely filed Notice of Appeal on December 5, 2002.

On appeal, the Sixth Circuit reversed and remanded the case with instructions to enter judgment in favor of

Respondent on Petitioner's manufacturing-defect claim and affirmed summary judgment for Respondent on Petitioner's failure-to-warn claim. *Greene*, 409 F.3d at 795. The Sixth Circuit found that, while Petitioner's evidence demonstrated the number of gyroscopes removed from the PHI helicopter fleet, Petitioner failed to show whether this removal rate was significant. *Id.* at 791-92. Petitioner's evidence at trial established several possible causes for the helicopter crash: weather conditions, instrument failure, and pilot error. *Id.* at 792-93. Accordingly, the court found that Petitioner's evidence demonstrated only a possibility and not a probability that gyroscope failure was a "substantial factor" in causing the helicopter crash. *Id.* at 791. On Petitioner's failure-to-warn claim, the Sixth Circuit found that the district court, pursuant to *Abdullah v. American Airlines, Inc.*, 181 F.3d 363 (3d Cir. 1999), correctly held that the claim was preempted by the Federal Aviation Act. 409 F.3d at 794-95.

ARGUMENT

I. There Is No Significant Split Among The Circuits Over The Extent To Which Federal Law Preempts State Aviation Safety Standards

Contrary to Petitioner's contention, no significant circuit split currently exists over the scope of Federal Aviation Act ("FAA") preemption. Rather, the disagreement among the circuits is shallow – two-to-one – and not well developed. Allowing the issue to percolate further among the lower courts will give this Court the benefit of more considered approaches to the question. Moreover, the Sixth Circuit's opinion below, because that court did not